CLAIMS

1. A method for processing a substrate in a spin, rinse, and dry (SRD) module, the method comprising:

providing the substrate to be processed;

positioning the SRD module in a substrate receive position;

orienting the substrate to be processed at an insert position that is defined at an angle;

inserting the substrate into the SRD module at the angle;

placing the SRD module in a process position;

spinning the substrate at the angle;

rinsing the substrate being spun at the angle; and

drying the substrate being spun at the angle.

2. A method for processing a substrate in an SRD module as recited in claim 1, wherein positioning the SRD module in a substrate receive position includes,

opening a window disposed in a wall of the SRD module; and

moving an engaging roller disposed within an enclosure of the SRD module from a first position to a second position, the moving being configured to provide a sufficient clearance for inserting the substrate into the SRD module at the insert position.

3. A method for processing a substrate in an SRD module as recited in claim 1, wherein orienting the substrate to be processed at the insert position includes,

shifting the substrate so as to create the angle defined between the substrate and a horizontal plane.

4. A method for processing a substrate in an SRD module as recited in claim 2, wherein placing the SRD module in a process position includes,

releasing the engaging roller being held at the second position to return to the first position so as to engage the substrate;

engaging the wafer using a pair of drive rollers, the drive rollers being configured to spin the substrate; and

closing the window disposed in the wall of the SRD module.

5. A method for processing a wafer in a spin, rinse, and dry (SRD) module, the method comprising:

engaging a wafer in a process plane, the process plane configured to define a process angle with a horizontal plane, the process angle being configured to optimize the performance of the SRD module;

spinning the wafer in the process plane; and

cleaning a top surface and a bottom surface of the wafer while spinning the wafer in the process plane.

6. A method for processing a wafer in an SRD module as recited in claim 5, wherein the cleaning includes one of scrubbing, rinsing, and megasonic fluid application.

7. A method for processing a wafer in an SRD module as recited in claim 5, wherein engaging the wafer in the process plane includes,

moving an engaging roller from a first position to a second position, the moving being configured to provide clearance for the wafer being inserted;

inserting the wafer to be processed at an insert angle;

engaging the wafer to be processed using a pair of drive rollers;

releasing the engaging roller to return to the first position;

engaging the wafer to be processed using the engaging roller.

8. A method for processing a wafer in an SRD module as recited in claim 7, wherein the insert angle is configured to be substantially equivalent to the process angle.

9. A method for processing a wafer in an SRD module as recited in claim 5, wherein spinning the wafer in the process plane includes,

using a pair of drive rollers to spin the wafer.

10. A method for processing a wafer in an SRD module as recited in claim 5, wherein the cleaning the top surface and the bottom surface of the wafer while spinning the wafer in the process plane includes,

applying a cleaning liquid on the top surface of the substrate, the applying being configured to form a substantially even layer of the cleaning liquid on a sector of the top surface of the wafer; and

applying the cleaning liquid onto the bottom surface of the substrate, the applying being configured to form a substantially even layer of the cleaning liquid on a sector of the bottom surface of the wafer.

11. A method for processing a wafer in an SRD module as recited in claim 6, wherein the megasonic fluid application includes,

applying a megasonic liquid onto the top surface of the substrate, the applying being configured to form a substantially even layer of the megasonic liquid on a sector of the top surface of the wafer; and

applying the megasonic liquid onto the bottom surface of the substrate, the applying being configured to form a substantially even layer of the megasonic liquid on a sector of the bottom surface of the wafer.

12. A method for processing a wafer in an SRD module as recited in claim 5, further comprising:

applying a first gas onto an edge of the wafer being processed;

applying a second gas onto the top surface and the bottom surface of the wafer being processed, the second gas being introduced into the SRD module through feed holes disbursed within inner walls of the SRD module.

13. A method for processing a wafer in a spin, rinse, and dry (SRD) module, the method comprising:

engaging a wafer in a process plane, the process plane configured to define a process angle with a horizontal plane, the process angle being configured to optimize the performance of the SRD module;

spinning the wafer in the process plane; and

cleaning a top surface and a bottom surface of the wafer while spinning the wafer in the process plane, the cleaning includes,

rinsing the top surface and the bottom surface of the wafer with DI water while spinning the wafer in the process plane; and

applying a megasonic flow to the top surface and the bottom surface of the wafer while spinning the wafer in the process plane.

14. A method for processing a wafer in an SRD module as recited in claim 13, further comprising,

rinsing the top surface and the bottom surface of the wafer with DI water after applying the megasonic flow; and

drying the top surface and the bottom surface of the wafer while spinning the wafer in the process plane.

15. A method for processing a wafer in a spin, rinse, and dry (SRD) module, the method comprising:

engaging a wafer in a process plane, the process plane configured to define a process angle with the horizontal plane, the process angle being configured to optimize a drying of the wafer;

spinning the wafer in the process plane;

cleaning a top surface and a bottom surface of the wafer while spinning the wafer in the process plane; and

drying the top surface and the bottom surface of the wafer while spinning the wafer in the process plane.

16. A method for processing a wafer in an SRD module as recited in claim 15, the method further comprising:

applying megasonic flow to the top surface and the bottom surface of the wafer while spinning the wafer in the process plane.

17. A wafer preparation module, comprising:

an enclosure containing wafer engaging rollers, the wafer engaging rollers being oriented at an angle, the wafer engaging rollers designed to spin a wafer at an angle during preparation.

18. A wafer preparation module as recited in claim 17, wherein the preparation includes one of rinsing, cleaning, drying, scrubbing, and megasonic fluid application.

19. A wafer preparation module as recited in claim 17, further comprising:

at least one cleaner dispenser configured to apply a fluid to a surface of the wafer during at least part of the preparation.

20. A wafer preparation module as recited in claim 17, further comprising:

a nozzle configured to apply a gas flow toward at least one of wafer engaging rollers.

21. A wafer preparation module as recited in claim 17, further comprising:

a megasonic spray assembly for applying a megasonic spray to a surface of the wafer.

22. A wafer preparation module as recited in claim 17, wherein at least one of the wafer engaging rollers is a drive roller.

23. A spin, rinse, and dry module comprising:

an enclosure having an outer wall, the outerwall being configured to include a window therein, the window being defined within the outerwall so as to create a process angle with a horizontal plane;

a pair of drive rollers defined within the enclosure, the drive rollers being configured to spin a substrate to be processed while engaging the substrate to be processed; and

an engaging roller defined within the enclosure, the engaging roller configured to engage the substrate to be processed, the engaging roller and the pair of drive rollers configured to engage the substrate to be processed such that the substrate to be processed creates an angle with the horizontal plane that is substantially equivalent to the process angle.

24. A spin, rinse, and dry module as recited in claim 23, further comprising:

a cleaner dispenser defined within the enclosure, the cleaner dispenser being configured to clean a top surface and a bottom surface of the substrate to be processed;

25. A spin, rinse, and dry module as recited in claim 23, further comprising:

a megasonic assembly defined within the enclosure, the megasonic assembly being configured to be applied to a top surface and a bottom surface of the substrate to be processed.

26. A spin, rinse, and dry module as recited in claim 23, further comprising:

a plurality of gas blow nozzles defined within an inner wall of the enclosure, at least one air blow nozzle being configured to dispense a first gas onto each of the drive rollers and the engaging roller;

27. A spin, rinse, and dry module as recited in claim 23, further comprising:

a plurality of holes defined within an inner wall of the enclosure so as to introduce a second gas into the enclosure, the second gas being configured to substantially evenly dry a top surface and a bottom surface of the substrate to be processed.